Publishable summary

SkyCoat addresses the emerging needs and trends in architecture and lighting to go beyond the traditional concepts of artificial lighting as a surrogate of natural light, aimed at extending the possibility to live, work and perform daylight activities also when and where natural light is missing.

Following the conviction that human beings need the contact with nature, with the outdoor and with the infinity of the natural space offered in nature by the depths of the sky and the distant sun, the project has conceived a technology that realizes the access to such infinite perspective also in blind spaces, even underground. This technology faithfully reproduces what the sun and the sky produce outdoors: a light with the perfect characteristic of the light that we experience in nature.

Project results

Building, urban planning and architecture face two main problems: on one side the excessive usage of soil for constructions and the relevant environmental effects, on the other side the increased tendency to use underground or very large spaces, where natural light is absent or is only present in very small portions of the used areas. The requalification of these areas is of main relevance and interest for policy makers and market players in the building and urban planning arena. Hypogeal spaces are one possible direction to start solving urban issues such as congestion, lack of open and public space, and aging infrastructures. On the other hand, urban design opportunities exponentially increase if the “earth surface” limitation is abandoned to pursue the option of populating the “volume” which stays above and below that surface. The use of underground space has potentials in terms of how it limits visual impact (zeroing one of the main public concerns about skyscrapers) while promoting efficient land use in a noise and vibration-free environment, where energy costs are reduced by controlling heat loss, thus increasing earth cooling and reducing daily temperature fluctuations. On the other hand, hypogeal architecture suffers limitations from the absence of natural light.

The project has investigated, designed and produced a range of lighting systems and apparatuses that faithfully reproduce the true daylight, even in underground or in blind conditions. In so doing SkyCoat recovers the original fusion of human beings into nature even in enclosed and dark spaces, where at present only the non-natural illumination produced by current artificial lighting limits the space. rather than producing a sensation of lightness and comfort.

This concept, originally translated into art by perspective, see for example the Madonna Litta painting by Leonardo da Vinci, is vital for human wellbeing, sensation of freedom and internal energy, that comes from the light of the Sun. It has in face been proven that the deprivation of natural light generates discomfort, affects the mood and work productivity, lowers concentration and has even serious psychological consequences, such as Seasonal Affective Disorders (SAD) and depression, while natural light has beneficial effects on patients for disease recovery.

Thus reproducing the light of the Sun as we see it, mediated by the atmosphere, is an ambitious goal for any lighting designer.

In this scenario SkyCoat proposes a groundbreaking solution, able to reproduce the effects of the combined light from Sun and Sky in interiors, underground and in any conditions where natural light is not available. The technologies developed by the project (CoeLux® technologies, from the name of the company holding

the IP of the inventions) introduce a drastic shift from current concept where artificial lighting is only a surrogate of natural light to a completely new technological level. CoeLux® technologies in fact exactly and perfectly reproduce the light (and the bluish shadows) of a clear Sun in a blue sky, they **SHOW a sun and a sky** as it is from a real window opened on the exterior. This astounding effect is obtained by means of the combination of two main physical concepts: the diffusing capability of the atmosphere that separates the yellow spectral wavelength of the sun and the bluish spectrum generated by the sky, recreated by the new SkyCoat materials, and the effect of infinite distance of the sun from our eyes, produced by means of an extremely complex combination of optical systems and light sources.

The disadvantages of hypogeal architecture, like limited or no natural light and negative psychological reactions, are blown away by the possibility of reproducing the sun and the sky many meters under the earth surface, therefore opening a new and unexplored market for Real Estate investors, architecture designers and buildings end-users. The project intends also to significantly impact on general lighting, *i.e.* for home, office, retail, industry, transport contexts, etc., and to demonstrate through specific studies its beneficial effects as compared to traditional artificial light. In the outdoor, SkyCoat allows tailoring the perceived silhouette of skyscrapers or tall building in general, making walls "disappear" and being replaced by a sunny sky.

In so doing, the project transfers the concepts from physics, optics, material sciences to architecture, engineering, light design, healthcare and even marketing, as it is demonstrated that natural light enhances mood and perception of objects, thus increasing the attractiveness of goods.

The goal have been attained by two different approaches, which lead to two groups of products for two different market segments.

The *first approach* is based on the development of a new, SkyCoat dichroic material, able to separate and then re-combine the yellow light of the sun from the bluish wavelength generated by the atmosphere. The new material will behave in a similar, but not identical, way as the sky does with respect to the sun light, the difference being related to the fact that the SkyCoat material operates in reflection, whereas the real sky in transmission mode. The lighting technologies and installations realized by SkyCoat in this way are meant as value range products, of sustainable costs and potential applications in any spaces.

The *second approach* is achieved in a modular and thin technology solution, obtained by the combination of a dichroic transparent material mounted on a highly technological panel of light sources and miniaturized optics.

To make the SkyCoat results a real marketable products line, standardization has been attentively considered throughout the whole project, insofar that all SkyCoat results and CoeLux® technologies comply to current standards for the majority of applications and that new standardization criteria have been proposed to European standardization bodies, to consider CoeLux® technologies the same as real windows looking out to the exterior.

The project starts from the background products created in the frame of the FP7-SME CoeLux project, that set the grounds for the diffusing materials and for the studies concerning optical elements and light sources. The Products resulting from the project, currently in the market (see www.coelux.com), have demonstrated that the business potential for SkyCoat results is enormous.

The SkyCoat project sees the participation of 14 partners from six European Countries, who have complementary expertise in all the areas of research: chemistry and materials sciences, industrial scaling up, coating technologies for innovative materials, design and architecture, building and real estate, installations and demonstration, underground construction and engineering, lighting design and lighting engineering, studies and clinical observations on lighting, standardization, marketing and communications, realistic rendering software realization for architects and lighting systems developers, industrial coating and micro-optics production, LED production and innovation.

The lighting systems (luminaires and installations) designed, developed and realized during the project, have been successfully implemented in three large demonstrators, aimed at showing the many possible applications of the technologies in architecture.

The first demonstration space consists in a modular façade layer, applicable to any building or construction, that has the effect to make the building wall "disappear" under a blue sky. The façade works both during daylight and during the night when a powerful lamp casts its light over the façade tiles. This technology is able to modify the perception of urban areas, and revamp old and shabby buildings.

The second demonstrator aims at bringing new concepts in interior design and lighting. It consists in a modular solution that extends the sunny sky all along a corridor. This installation has been applied to a blind apartment in Vilnius and demonstrates how a low-cost flat can be transformed into a top range apartment, where innovative ideas for internal design can be successfully applied and transform the living space. The applications of this technologies are enormous, in particular in large public spaces, underground pedestrian tunnels or any space. The modularity of the technology is fit for almost infinite applications.

The final demonstrator is a big dome, that simulates a real sky over the spectator's head. This spectacular installation has been designed for large exhibitions, and even for applications in high-value locations or in large spaces.

SkyCoat at a glance

Start date: 01/12/2012 **End date**: 30/11/2015

Total EU contribution: 3.324.161 euro

Coordinator:

Università degli Studi dell'insubria (www.uninsubria.it)

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Partners:

CoeLux Sr. (www.coelux.com)

Bartenbach GmBH (www.bartenbach.at)

Eidgenoessische Technisches Hochschule Zuerich (www.ethz.ch)

Lechler SPA (www.lechler.eu)

Next Limit SA (www.nextlimit.com)

Caputo Partnership Srl (www.caputopartnership.it)

UAB Ekspobalta (www.ekspobalta.com)

JSC EIKA (www.eika.lt)

Metropolitana Milanese SPA (www.metropilitanamilanese.it)

Survey Marketing + Consulting GmBH and CO KG

Prima Ricerca e Sviluppo Srl (www.primaricerca.it)

ODL Coating Srl (www.odlcoating.com)

Salchi Metalcoat Srl (www.salchimetalcoat.com)

SkyCoat Consortium

The SkyCoat Consortium consists of 14 partners coordinated by Professor Paolo Di Trapani (Università degli Studi dell'Insubria - Italy).

Partners

Università degli studi dell'Insubria - Project Coordinator

Università degli studi dell'Insubria The University of Insubria (IN) participates in SkyCoat with the Department of Science and High Technologies. The Department of Science and High Technologies at IN has a remarkable experience in Optics due to the research activity carried out by 5 different groups, which work in this field. The research group coordinated by Prof. Di Trapani has expertise in the fields of Nonlinear Optics, Laser Optics, Optical Design, Microfabrication and Colour science of optical materials (www.optics-di-trapani.it). The facilities at Insubria consist of two fully equipped laboratories and one under construction. Moreover the group can benefit from the collaboration with and assistance of staff working in neighboring groups. The group is the creator of the Light in Light exhibition (see www.diluceinluce.eu), which is dedicated to the indoors study and reconstruction of optical atmospheric phenomena, such as rainbows, sunsets and blue skies. This exhibition has acted as a spark for the invention and development of the SkyCoat technology.

Role in SkyCoat

In SkyCoat IN acts as project coordinator and is responsible for project management. IN is also involved in all workpackages where optical-material physical modeling (from the macro to the nano scale), optical material, component and device characterization, data analysis and numerical simulations are needed. IN leads the scientific coordination of the project and especially contributes to the scientific aspects of the R&D activities in all WPs.

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CoeLux Srl - Beneficiary N. 2

CoeLux Srl (COE) was founded in March 2009 by Prof. Paolo Di Trapani and his students as an academic spin off of University of Insubria. Despite being a young academic spin-off, COE has been performing a fast growth of know-how in its life, in the fields of innovative nano-structured materials, sophisticated optical layouts, luminaire design and visual comfort engineering aimed at the market of lighting technologies. COE devotes a large part of its activity to the relationship between visual comfort in artificial illumination and natural daylight, as evidenced by its major role in the FP7 EC funded project "CoeLux" (started in 2011, ended Nov. 2012). COE is the owner of the science and art performance "di luce in luce", its founding mission being to transform educational product in an high-tech business breakthrough. Its staff competences cover chemistry, physics, optics, light design, modeling, furniture design, architecture, and business fields.

Role in SkyCoat

COE is the main actor in the project and played a strategic role in the project. In fact, it has in house the capacity of merging different languages, and so assist the various partners talk to each other in spite they belong to very different contexts. COE coordinates two workpackages (WP3, WP4), where it was in charge of defining the requested optical, chemical and perception characteristics, and will closely follow and validate each step up to functional sample realization. COE produced the functional samples of luminaires, and worked in close collaboration with other teams to develop the 3 architectural solutions (WP5) demonstrated in WP6 and WP7. COE coordinates the work on IPR and market impact.

COE has also taken over the majority of dissemination activities originally assigned to Metropolitana Milanese SPA and to Survey Marketing + Consulting & Co.

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Bartenbach GmbH - Benficiary N. 3

Bartenbach (BB) is a leading international lighting consultant and R&D provider in day- and artificial lighting. It incorporates a planning department (43 architects, designers, engineers and technicians), a R&D department (15 physicists, mathematicians, engineers, psychologists), and the connected Lighting Academy (a branch of the University of Innsbruck) for postgraduate education in Lighting. BB is well known for its studies on visual perception and physiopsychological (non visual) effects of light, and on light & health: scientific test methods were developed to study the interrelation between light and visual performance, well-being, arousal and health. BB is engaged in the development and optical design of lighting systems for industrial enterprises, photometric measurements and analysis, lighting laboratory studies and artificial sky studies for model measurements, the development of calculation and measuring methods, the development of simulation tools (computer programs, models), lighting fundamentals and building physics (in connection with day-lighting, sun shading, etc.). This knowledge and the highly skilled technical and scientific employees allow the company to resolve highly complex lighting and building design tasks. BB is and was involved in several EU funded projects and has experience with the co-ordination and leading of multidisciplinary teams and partners of different trades. BB is also engaged in the national socalled 'Kompetenzzentrum Licht' as the main R&D-provider. BB's scientific work has found its way into more than 100 patents.

Role in SkyCoat

BB studied the existing standards for what concerns illumination, comfort standards and physio-psychological (non visual) effects and users perception. Finally tests on comfort and users perception were performed in reconstructed environments with SkyCoat and traditional lighting, with the participation of MDs and psychologists as well as physicists. At the Bartenbach LichtLabor a department for perception psychology is established which has already carried out many international research projects. Contacts via different projects with the leading light impact researchers all over the world are existing, including also a multi-disciplinary approach with research partners from different fields (medicine, industry and ergonomics). BB has also shared its long-term-R&D experience in luminaire development for the development of four LED projectors, starting from the concept phase up to functional sample.

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ETH Zürich - Eidgenössische Technische Hochschule Zürich - Beneficiary N. 4

ETH is a science and technology university with an outstanding research record. ETH Zurich is the study, research and work place of 20,000 people from 80 nations. About 370 professors in 16 departments teach mainly in the engineering sciences and architecture, system-oriented sciences, mathematics and natural sciences areas and carry out research that is highly valued worldwide.

As an RTDP of the proposed project, the Morbidelli Group of ETH Zurich has its expertise in the following areas: emulsion, bulk and frontal polymerization techniques; organic nanoparticle preparation and characterization; nano- and colloidal particle stability, aggregation mechanism and kinetics; experience in collaboration with industrial companies. The role of the Morbidelli Group in the project concerns the R&D of Polymer Matrix/Nanoparticle Composites.

Role in SkyCoat

In SkyCoat ETH has developed the main SkyCoat materials up to the lab scale and some of the material solutions up to the industrial scale. ETH leads WP2. ETH will also participate in the dissemination actions, targeting the scientific community.

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Lechler Spa - Beneficiary N. 5

Lechler (LCH) is a European well known Italian Company operating in the international coatings market since 1858. Almost 450 people work at the Italian Headquarter, at the two production sites of Como and Perugia, and in the other four European centres in Manchester, Grenoble, Barcelona and Kassel. Lechler attaches a great importance to quality standard and to product technological updating. UNI EN ISO 9001:2000 International Quality Certification is adopted in all the planning manufacturing and trading activities. Lechler offers a wide and well-known range of specialised products and services for Industry, Refinish, Decorative and Yachting, which are identified by the four brands of the group. A community of 50 chemists works in the well-framed Lechler R&D Department. The work is structured in long term activities (Research and Project group) and medium and short term ones, concerning waterborne, high & medium solid, and UV systems dedicated to the four brands. The focus of the work activities is directed to find innovative, smart and very low impact technological solutions, in particular in the field of waterborne and high solid technologies, where Lechler has achieved a significant experience. Lechler Tech for Industry is the Lechler project studied for the industrial field: it has been created for all the companies which want to add competitive value to their product in the market, through their manufactures painting both in terms of aesthetic and in terms of resistance and lasting, with a continuous research of new solutions.

Role in SkyCoat

Lechler led the industrial scale-up process of SkyCoat materials. Being an industrial partner, LCH will also actively contribute to the exploitation of results, and will act as the SkyCoat paint industrial producer in future business development.

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Next Limit Technologies SA - beneficiary N. 6

Next Limit (NL) is a Spanish company founded in 1998 by Victor Gonzalez and Ignacio Vargas. The headquarters are located in Madrid. The mission of the company is to provide cutting edge physical simulation technologies as software tools for a broad range of applications in Computer Graphics, Science and Engineering. NL boasts a young, multidisciplinary team of nearly 40 persons with expertise in physics, mathematics, computer graphics, engineering and visualization. They all share a common vision for the creation of new products that connect science, simulation and visualization using novel paradigms and innovative methodologies. NL's products include "RealFlow" first tool in the market for creating dramatic, accurate and realistic fluid simulation effects in the visual effects market (notably in feature films and television commercials). The company was awarded in 2008 with a Technical Achievement Award, commonly known as the "Technical Oscar" by AMPAS (USA). NL is also specialized in state-of-the-art rendering technology based on the physical equations governing light transport. This approach enables users to digitally create highly accurate and believable images of the real world. This methodology produces incredibly realistic illumination without resorting to the tricks and approximations used by many current industry standard renderers. NL's research and development continues to explore and improve simulation techniques, advanced mathematical models and programming methodologies. Projects are emerging in the area of fluid and particle simulation for engineering and new rendering technologies for advanced lighting simulation. The company has been also awarded with two European IST prizes (Information Society of Technology) in 2006 for their contributions in advanced software technology in the fields of fluid simulation and photorealistic rendering.

Role in SkyCoat

Next Limit has produced and provided a powerful accurate rendering platform able to simulate SkyCoat lighting systems and the resulting architectural ambient illumination. For this project Next Limit has devoted the work and skills of his main development team composed of computer programmers and software engineers.

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Caputo Partnership Srl - Beneficiary N. 7

CAPUTO PARTNERSHIP
architettura urban design

Caputo partnership (CP) is a small enterprise consisting of a team of architects and engineers, offering project and design services. The activity developed in more than thirty years is oriented mainly towards feasibility studies and projects, urban design and architectural planning, from preliminary phases through final implementation. CP gained expertise and professional know-how through experiences with urban design and the planning of parks, museums, religious buildings and public health and educational projects, commercial and multipurpose centres, hotels, residential buildings and office, centres for public and private entities, operating both in Italy and abroad. Caputo Partnership team first considers the historical identity of a place, then applies a methodology aimed at interpreting and increasing its value, focusing on the connection between the new and the pre-existing context and, to a scale of living, a precise study of its quality through the relationship with the outside, with the light, materials and colours. The methodology furthermore, utilizes the ultimate and most innovative technologies in order to promote the highest standards of expertise from the environmental and technological points of view. The expertise is mostly architectural although the planning phase is always approached from an interdisciplinary perspective thanks to a well-established collaboration in the field of structural and plant engineering as well as urban law and economics. The results of the studio's research, projects and plans have been published in books and specialized journals and magazines and have been exhibited at architectural conferences, exhibitions and seminars in Italy and abroad.

Role in SkyCoat

CP coordinated the architectural activities, and thus the "creative" team of architects. CP is responsible of the delivery of 3 architectural executive projects, contributed to the analysis of standards, and was a main actor in the demonstration activities and events. CP will be strongly involved in the overall promotion of SkyCoat solutions among stakeholders in the architecture and urban planning and in the construction areas.

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UAB Ekspobalta - Beneficiary N. 8

Ekspobalta (EB) is a small size enterprise based in Vilnius, Lithuania, and engaged in expositions, events and advertising industry. The settled personnel staff does not exceed 30 persons. However, contextually to the realization of large projects, up to 50 people are employed.

UAB "Ekspobalta" is a company engaged in expositions, events and advertising. Since its establishment in 1996, professional services provided by the company are based on quality and new technologies. The company is oriented towards working in Lithuania as well as the entire Europe and CIS.

In 2001 UAB "Ekspobalta" was one of the founders of the Lithuanian Exhibition Stands Builders Association "LIPSTA" and in 2002 it became a member of International Exhibition Organisers Association "IFES".

The main EB clients are: "Robert Bosch", "Junkers", "Rannila", "General electric", "Siemens", "Multivac", Lithuania-Government institutions, the Lithuania National Museum and Gallery.

Role in SkyCoat

Given its expertise in the development and organization of big demonstration events, EB led the demonstration activities in SkyCoat and coordinated the refitting of one apartment and the coverage of a building façade with SkyCoat technology. EB was the main actor in the installation of the demonstrators in Vilnius (apartment and façade) and for the installation of the SkyDome in Italy (WP7) as well as contributed to the setup of the dissemination and promotional video shooting locations.

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Metropolitana Milanese Spa - Beneficiary N. 9

Metropolitana Milanese Spa (MM) is a Joint Stock Engineering Company entirely controlled by the Municipality of Milan. Founded in 1955 to design and build the Milan Metro, it is now the leading Italian Company in civil and plant engineering sectors for urban and extra-urban railway networks. Over the years MM has broadened its field of interest and diversified its work and market areas, applying its know-how to other important towns, both in Italy and abroad. The Company offers in fact engineering services related to traffic and mobility planning, parking areas (on surface or underground) and park-and-ride facilities, land use and urban renewals plans, architecture and restructuring of town areas, special buildings and structures, environment (air and water treatment and noise and air pollution monitoring and abatement). In its specialist areas, MM provides services which cover the entire design process from general surveys and studies to preliminary, detailed and executive designs. It also provides the following services: general contracting, contract and construction site management, engineering, project financing; MM has been providing these services and know-how for the last forty years and in addition it makes them available to other bodies and Public Administrations. MM SpA operates with a total of 740 units of which about 240 employees (December 2010) operating in the Engineering sector. In Milan MM has built the entire Metro System on a "turn-key" basis and so far this comprises three underground lines with a total length of over 75 km and 88 stations. Furthermore, MM has completed the engineering activities for the first section of the Milan Urban Railway Connection running underground 10 km with 7 stations and also in Naples the first section of the metro line 1, with a total length of 13 km with 15 stations. The Company participates to many national and international projects (Naples, Turin, Rome, Alexandria of Egypt, Porto, Copenhagen, Manila, Thessaloniki).

Role in SkyCoat

In SkyCoat MM originally was appointed to lead the dissemination activities and in particular to the realization of the underground dissemination space in the frame of the Milan Metro lines new developments. MM has defined the dissemination strategy for the project at the project start. MM also developed a project (concept and designs) for a new subway line illuminated by SkyCoat technologies in WP5. Due to delays in the realization of the subway station where the big demonstrator for dissemination should be realized, MM limited its contributions to the definition of possible installation in underground spaces and contributed to the design of the relevant projects (WP5) and to the identification of the related standards.

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SURVEY Marketing Consulting GmbH & Co. KG - Beneficiary N. 10

Survey Marketing + Consulting GmbH & Co. KG

The company was originally involved with its Business Division Material ConneXion Cologne. After February 2014 the mother company took over with its marketing department. The company is a qualified fairs and marketing events organized worldwide, is mostly involved in marketing, commercialization and products promotion in the building, construction and furbishing areas. The company has also a branch in Malaysia.

Role in SkyCoat

MCC has contributed to the definition of the dissemination and commercialization framework and will be a main actor for future commercial exploitation of SkyCoat products.

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Prima Ricerca & Sviluppo Srl - Beneficiary N. 11

Right from the start, Prima Ricerca & Sviluppo (PRM) has seen its mission as services Supplier in the field of compliance assessment required by European directives, technical standards and project/product specification. The Company supplies a global support to the manufacturers from the concept phase to the launch into the market of a product. Prima Ricerca & Sviluppo is:

• A recognized laboratory and Preferred Partner by the most important worldwide Certification Bodies as UL (Underwriters Laboratories, USA), TUV Rheinland (Germany), NSAI (Ireland) for safety, reliability and performance testing;

• An EMC and radio spectrum accredited testing laboratory;

• A UE Notified Body under EMC Directive 2004/104/EC, Low Voltage Directive 2006/95/EC and Machinery Directive 2006/42/EC;

• A Member of National and International Technical Committee on EMC, Safety and Performance test for different Product categories including Lighting Equipment;

• A recognized of the NSAI Ireland under Vehicle EMC Directive 72/245 and Vehicle alarm systems.

Prima Ricerca & Sviluppo Personnel involved in Technical Area consists of 10 people of which 5 graduates in Materials/Electrical /Electronic engineering and 5 with Technical high school diploma

Role in SkyCoat

PRM is responsible for the standardization works in WP8 and is in charge of the definition of technical specification for the project concerning different aspects as materials, fire, electrical, physical, electromagnetic, photometric and photobiological requirements. PRM has been deeply involved in the validation of representative products or product designs according to the standards for the defined destination of usage and in the preparation of a technical proposal for new (or modification of) product standards, or for product modification when compliance to standard is not fulfilled

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UAB EIKA - Beneficiary N. 12

Established in 1992 "Eika" is one of the largest real estate developers and construction service providers in Lithuania. "Eika" is a real estate market leader, successfully implementing residential, commercial, public and other usage individual projects and complexes. The main purpose of "Eika" development is to introduce the quality and innovations into the business and daily life. "Eika" is valued by clients and business partners for the progress, innovativeness and reliability. "Eikos statyba" is one of the biggest construction companies in Lithuania with great experience in the construction and renovation of administrative, public, commercial, industrial and residential buildings. "Eikos Statyba" provides a wide range of services from decoration to general contractor functions. The package of services contains construction works, engineering systems, field engineering systems, insulation of facades, concrete flooring, electrical wiring and other equipment installation, engineering network installation, landscaping works and other services.

In 2009 Eika group became a service provider offering a wide range of real estate development services for their customers. Today Eika group services are of sustainable development and environmental protection solutions for business, public-private partnership projects, territorial planning and building design, construction project management, building construction, installation of building systems, real estate development management, strategy and implementation of renovation, technical supervision, expert analysis of buildings and structures, real estate asset management and administration.

Role in SkyCoat

EIKA is responsible for the demonstrations of SkyCoat solutions for architecture. Two installations will be realized:

- a demonstration apartment for indoor SkyCoat lighting solutions;
- a demonstration of the outdoor application, in staircase or building façade.

In particular EIKA provided the apartment and the façade, refurbished the apartment as necessary for the SkyCoat installations and provided the furniture and all the necessary settings to reproduce a real interior space. EIKA will also contribute to dissemination and future market promotion.

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ODL Srl -Beneficiary N. 13

ODL Srl designs and manufactures optical thin film coatings in the near ultraviolet, visible and infrared spectral regions. In 2009 the company bought the business of ODL SpA taking charge of the production facilities as well as all the staff, including the founding members who, since 1987, work in the field of thin film processing. Founded with the aim of developing processes and products for scientific and research laboratory, ODL is now a company oriented to the industry, more and more interested in the optical coatings. On a surface of more than 2000 square meters ODL counts today more than 40 employees in the Brembate di Sopra (Italy) facility. From 2006 a new production unit has been set up in China (Guangzhou). The product range includes antireflection coatings for industrial optical systems, dichroic filters, anti-UV and anti-IR filters, corrective filters to modify the lighting source emission, cold mirrors and other customized coating for specific application in the mentioned spectral region. The main application fields which ODL attends with professionalism and innovation are: entertainment industry, railway and airport signals, architectural lighting, medical systems, solar energy and photovoltaic industrial optics

Role in SkyCoat

ODL Srl was responsible for the design and development of optical coatings to increase the efficiency of the components involved in the transmission and/or diffusion of the light and will cooperate in the definition of optical material, component and device characterization.

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www.odlcoating.com

Salchi Metalcoat Srl -Beneficiary N. 14

SALCHI METALCOAT, today the first Italian independent manufacturer of coatings and inks for metal packaging and coil and among the first in Europe, offers a wide range of coil-coating paints both for exterior and interior uses. The production range comprises Primers, Top-coats and back coatings. Their chemical nature is including, Polyesters from conventional to superdurable, Polyurethanes, Fluorine based, epoxies, Polyurethane/polyamides, Polyester/Polyamides. All of them both as pigmented or as clear coating.

The wide range of resins formulated in Salchi Metalcoat Srl laboratories or offered by the market, enables to satisfy almost all the requests of the coil coating market both in terms of physical-chemical properties and in terms of a lot of different surface appearances. State-of-art machinery and laboratories equipped with the best instruments for the control of color, mechanical properties of paints and their behaviour in accelerated weathering tests or in corrosion resistance tests enable Salchi to start from laboratory samples and to make all the scale up necessary to reach a reliable commercial formula of a new product.

Salchi Metalcoat Srl counts today 91 employees, 8 of them dedicated to quality control and 21 operating in the R&D laboratories.

Role in SkyCoat

SALCHI has developed SkyCoat materials for use in exteriors and interiors through coil-coating techniques.

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